

Serial No.: 10/808,884  
Filed: March 25, 2004

Complete set of claims

1(currently amended). A positive bottom photoimageable antireflective coating composition which is capable of being developed in an aqueous alkaline developer, wherein the antireflective coating composition comprises a water insoluble polymer comprising at least one recurring unit with a chromophore group and one recurring unit with a hydroxyl and/or a carboxyl group, a vinyl ether terminated crosslinking agent, and optionally, a photoacid generator.

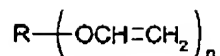
2(original). The composition according to claim 1, wherein the chromophore group is chemically bonded to the polymer and is selected from a compound containing aromatic hydrocarbon rings, a substituted or unsubstituted phenyl group, a substituted or unsubstituted anthracyl group, a substituted or unsubstituted phenanthryl group, a substituted or unsubstituted naphthyl group, a substituted or an unsubstituted heterocyclic aromatic rings containing heteroatoms selected from oxygen, nitrogen, sulfur, and a mixture thereof.

3(original). The composition according to claim 1, wherein the recurring unit containing a hydroxyl and/or a carboxyl group is derived from a monomer selected from acrylic acid, methacrylic acid, vinyl alcohol, hydroxystyrenes, copolymers of hydroxystyrene and vinyl monomers containing 1,1,1,3,3,3-hexafluoro-2-propanol.

4(original). The composition according to claim 1, wherein the chromophore group and the hydroxyl and/or a carboxyl group are present in the same recurring unit.

5(original). The composition according to claim 1 comprising a vinyl ether terminated crosslinking agent represented by the general structure below;

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wherein, R is selected from a (C<sub>1</sub>-C<sub>30</sub>) linear, branched or cyclic alkyl, substituted or unsubstituted (C<sub>6</sub>-C<sub>40</sub>) aryl, and substituted or unsubstituted (C<sub>7</sub>-C<sub>40</sub>) alicyclic hydrocarbon; and n ≥ 2.

6(currently amended). The composition of claim 1, further comprising ~~an acid or~~ a thermal acid generator.

7(currently amended). The composition of claim 6, where ~~the acid or the acid~~ derived from the thermal acid generator has a pKa greater than 1.0.

8(currently amended). The composition of claim 6, where ~~the acid or the acid~~ derived from the thermal acid generator is removed from the antireflective coating at temperatures below 220°C.

9(original). The composition according to claim 1 further comprising a dye.

10(original). The composition according to claim 9, wherein the dye is selected from the group consisting of a monomeric dye, a polymeric dye and a mixture of a monomeric and a polymeric dye.

11(currently amended). The composition according to claim 1, wherein the antireflective layer composition has a k value in the range of 0.1 to 1.0.

12(Cancel).

13(original). The composition according to claim 1, wherein the photoacid generator is sensitive to actinic radiation in the range of 50 nm to 450 nm.

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14(withdrawn).

15(withdrawn).

16(withdrawn).

17(new). The composition according to claim 1, where the composition further comprises an acid.

18(new). The composition of claim 17, where the acid has a pKa greater than 1.0.

19(new). The composition of claim 17, where the acid is removed from the antireflective coating at temperatures below 220°C.